

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 07/02/2009 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., numerous unexpected advantage) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Furthermore, applicant has argued that neither Park (US Pat. 6,525,313, hereinafter Park) nor Lubda et al. (US PGPub 2003/0155676, hereinafter Lubda) teaches or suggests to fill the capillary with a monolithic sorbent having macropores with a mean diameter of greater than 0.1 μm . However, Lubda does, in fact, teach this limitation (see paragraph [0026]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5-11, 14-17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lubda in view of Park.

Regarding claims 1 and 2, Lubda discloses a capillary filled with monolithic sorbent having macropores with a mean diameter of greater than 0.1 μm (see paragraph [0026]). Lubda does not disclose the capillary is sheathed with metal foil, at least at one end. However, Fig. 5C of Park discloses a capillary with metal foil (33) (see col. 7, lines 27-30) made of gold (see col. 7, lines 43-52). It would have been obvious at the time of invention to a person of ordinary skill in the art to modify Lubda by having a gold foil sheathed at least one end of the capillary for the purpose of having a needle to generate ions with a chemically inert metal (gold) to prevent unwanted ions to be formed.

Regarding claims 3, 5, and 9 Lubda discloses that the monolithic sorbent is a silica sorbent (see paragraph [0043]). It should be noted that silica is inorganic.

Regarding claims 6 and 7, a difference between Lubda and the claimed invention is a capillary end is sheathed with a metal foil is tapered internally and externally. Fig. 5C of Park discloses a metal foil which is tapered internally and externally. It would have been obvious at the time of invention to a person of ordinary skill in the art to modify

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Lubda by having a gold foil sheathed at least one end of the capillary to be tapered internally and externally for the purpose of having a needle to generate ions with a chemically inert metal (gold) to prevent unwanted ions to be formed.

Regarding claims 8 and 10-11, a difference between Lubda and the claimed invention is the capillary is used in a mass spectrometric analytical instrument.

However, Fig. 1 of Park discloses a mass spectrometric analytical instrument wherein at least having a capillary (20) for carrying out separations (see col. 2, lines 23-25) within an ionization source (101) (see col. 2, lines 11-14). While Fig. 1 of Park does not explicitly show a mass spectrometric analytical instrument, it is well known in the art that mass spectrometers have an ionization source (such as AP-ESI as shown in Fig. 1).

Furthermore, Fig. 1 of Park does not show the capillary is sheathed with metal foil.

However, Fig. 5C of Park discloses a capillary is sheathed with metal foil. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to have the capillary sheathed with metal foil to be the capillary (20) of Fig. 1 as well as having the end facing the mass spectrometric analytical instrument for the purpose of configuring a working ionization source for mass spectrometry.

Regarding claim 14, Lubda discloses the macropores have a diameter greater than 0.1 μm (see paragraph [0026]). Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Lubda by having macropores be between 1 and 10 μm , since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

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Regarding claim 15, Lubda discloses mesopores having a diameter between 2 and 100 nm (see paragraph [0026]).

Regarding claim 16, a difference between Lubda and the claimed invention is the metal foil is aluminum, platinum, titanium, palladium, silver, or a stainless steel foil. However, Park discloses the metal foil may be platinum or stainless steel (among others) (see col. 7, lines 27-30). It would have been obvious at the time of invention to a person of ordinary skill in the art to modify Lubda by having a gold foil sheathed at least one end of the capillary for the purpose of having a needle to generate ions with a chemically inert metal (platinum or stainless steel) to prevent unwanted ions to be formed.

Regarding claim 17, a difference between Lubda and the claimed invention is the metal foil covers the outside of the capillary over at least 3 mm starting from the end of the capillary. However, Fig. 5C of Park discloses the metal foil (33) covers portion of the outside of the capillary starting from the end of the capillary (30). While there is no scale to refer to, Fig. 5C shows a significant portion of the foil (33) over the end of the capillary (30) and it would have been obvious at the time of invention to a person of ordinary skill in the art to cover a portion of the capillary to firmly support the needle to the capillary.

Regarding claim 20, a difference between Lubda and the claimed invention is the gold foil is from 10-50 μm thick. However, Park discloses that the foil be thin for certain properties (i.e. durability, formation, spray type, etc.) and on the type of material (e.g. gold, copper, etc.) (see col. 7, lines 47-54). However, it would have been obvious to one

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having ordinary skill in the art at the time the invention was made to modify the invention of Lubda by choosing a thickness for the gold foil, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Claims 12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lubda in view of Park, as applied to claim 1 above, and in further view of Cates et al. (US Pat. 4,726,822, hereinafter Cates).

Regarding claims 12 and 19, a difference between Lubda and the claimed invention is the capillary is a plastic coated fused silica. However, the figure of Cates discloses a chromatograph column (1) with a fused silica capillary (2) coated with a plastic (4) (see col. 1, lines 51-56). It would have been obvious at the time of invention to a person of ordinary skill in the art to modify the combination of Lubda and Park to have the capillary be a plastic coated fused silica for the purpose of having a means of transporting ions with a chemically inert, heat resistant material.

Claims 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lubda in view of Park as applied to claim 1 above, and further in view of Manger et al. (US Pat. 7,442,556, hereinafter Manger).

Regarding claim 13, a difference between Lubda and the claimed invention is the capillary has an internal diameter of less than 50 μm . However, Manger discloses the inner diameter of the nozzle is in the range of 10 to 50 μm (see col. 7, lines 26-29)

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which is substantially similar to the width of the capillary (see col. 7, lines 32-37) to minimize flow disruption between the capillary and the needle. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Lubda by having the inner diameter of the capillary be less than 50 μm for the purpose of controlling the flow rate within the capillary.

Regarding claims 18, a difference between Lubda and the claimed invention is the capillary end with the metal foil is tapered externally, where the outside diameter of the capillary decreases towards the end and the internal diameter of the capillary tube remains the same. However, Manger discloses the inner diameter of the nozzle (14) is substantially the same as the capillary tube (18) (see col. 7, lines 26-37). Manger further discloses that the tip of the nozzle may be tapered (see col. 5, lines 4-11). In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Lubda by having the outer diameter of the capillary decrease while the inner diameter of the capillary remains the same for the purpose of positioning the foil to provide a voltage to the sample.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanway Chang whose telephone number is (571)270-5766. The examiner can normally be reached on Monday to Friday 7:30 AM till 4 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Hanway Chang

October 9, 2009

/H. C./

Examiner, Art Unit 2881

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